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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,542	02/27/2004	Frederic Scheer	112843-63	7084

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BELL, BOYD & LLOYD, LLP
P.O. Box 1135
CHICAGO, IL 60690

EXAMINER	
CHEN, VIVIAN	
ART UNIT	**PAPER NUMBER**
1773	
MAIL DATE	**DELIVERY MODE**
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/788,542	SCHEER ET AL.	
	Examiner	Art Unit	
	Vivian Chen	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 August 2007 and 18 July 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6,11,12,14-16 and 18-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6,11,12,14-16 and 18-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 3, 7-10, 13, 17, 28-30 have been cancelled by Applicant.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/24/2007 has been entered.

Specification

2. The amendment filed 1/24/2007 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the newly added claim limitation in claim 25 reciting an organic acid content of up to and including 5% by weight.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. Claim 25 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described

in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention for the reasons stated above in the objection to the amendment filed 1/24/2007 under 35 U.S.C. 132(a). The disclosure as originally filed fails to provide support for the required presence of organic acids.

2. Claims 4-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 4-6 are vague and indefinite because the claims are dependent on a cancelled claim.

Claim Rejections - 35 USC § 103

4. Claims 1-2, 4-6, 11-12, 14-16, 18-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over CHEN ET AL (US 5,756,651);

in view of GRUBER ET AL (US 5,594,095);

and in view of MOHANTY ET AL (US 6,869,985).

CHEN '651 discloses polylactide-based compositions comprising polylactide, 3-40 wt % polycaprolactone, 5-20 wt% plasticizer (e.g., monocarboxylic esters such as adipate esters), and 0.5-10 wt% antiblocking agent (e.g., talc). The compostions are melt processible at typical temperatures of 180 C. (line 42-53, col. 3; line 60, col. 4 to line 5, col. 5; line 37, col. 5 to line

20, col. 6; line 12-20, col. 7; line 60-63, col. 8; line 44-50, col. 9) However, the reference fails to explicitly disclose the use of polylactides in multilayer structures.

GRUBER ET AL '095 discloses that it is well known in the art to use biodegradable polylactide resins and blends as a layer in a laminate (e.g., as a coating for paper) and/or as foamed or molded articles. The reference further discloses that it is well known in the art to incorporate free radical initiators (e.g., organic peroxides) to polymerized polylactide resins after polymerization in order to improve rheological properties, wherein the molar ratio of initiator to polymer is typically 0.01:1 to 10:1. (line 24-31, col. 5; column 15; line 15-24, col. 25; line 6-33, col. 28; line 59, col. 28 to line 34, col. 29; line 10-25, col. 31; Example 11, 13)

MOHANTY ET AL discloses that it is well known in the art to incorporate peroxides into biodegradable polymeric mixtures containing both polylactide resins and polycaprolactone resins in order to improve rheological properties such as melt strength and other physical properties. (MOHANTY ET AL, line 15-30, col. 2; line 10-13, col.. 8) (KRISHNAN ET AL, line 25-40, col. 6; line 25-38, col. 9)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the biodegradable polylactide compositions disclosed in CHEN '651 in conventional biodegradable film applications such as paper coatings and/or foamed articles as disclosed in GRUBER ET AL '095 and in the production of commonly known disposable food service articles (.e.g, plates, cups, etc) (claims 12, 22, 24, 27). It also would have been obvious to optionally add effective amounts of organic peroxides to the disclosed polylactide resin-based composition (claims 5, 15) in order to improve rheological properties and melt processing characteristics of the composition. With respect to the presence of copolyesters

with adipic acid and/or mono-esters, claim language such as "less than 5%", "up to 5%", "less than 2%" all encompass the value of 0%. Since the minimum amount of said components required in the claimed composition can be 0% (i.e., the specified components are deemed to be optional), prior art compositions containing 0% copolyesters with adipic acid meet the compositional limitations as recited in the present claims. The Examiner has reason to believe that the molar ratio of peroxide to polymer disclosed in the references read upon and/or encompass the weight% range recited in the claims, therefore the Examiner has basis for shifting the burden of proof to applicant as in In re Fitzgerald et al., 205 USPQ 594.

5. Claims 1-2, 4-6, 11-12, 14-16, 18-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-026658 (JP '658);

in view of CHEN ET AL (US 5,756,651);

and in view of MOHANTY ET AL (US 6,869,985).

JP '658 discloses polylactide-based compositions comprising 100 parts polylactic acid resin, 10-300 of an aliphatic polyester (e.g., polycaprolactone), 0.01-5 wt% peroxide (e.g., cumyl hydro peroxide, etc.), plasticizer, and pigment. The composition is used as a layer in a laminate (e.g., as a coating for paper) and/or foam. The compostions are melt processible at typical temperatures of 170 C or more. (entire document, e.g., abstract; paragraphs 12, 20, 28-31, 38, 43, 50, 53, 61, etc.)

CHEN '651 discloses that it is well known in the art to incorporate 5-20 wt% plasticizer (e.g., monocarboxylic esters such as adipate esters), and 0.5-10 wt% antiblocking agent (e.g., talc) into polylactide polymer films in order to improve flexibility and/or film handling

properties. (entire document, e.g., line 42-53, col. 3; line 60, col. 4 to line 5, col. 5; line 37, col. 5 to line 20, col. 6; line 12-20, col. 7; line 60-63, col. 8; line 44-50, col. 9; etc.)

MOHANTY ET AL discloses that it is well known in the art to incorporate peroxides into biodegradable polymeric mixtures containing both polylactide resins and polycaprolactone resins in order to improve rheological properties such as melt strength and other physical properties. (MOHANTY ET AL, line 15-30, col. 2; line 10-13, col.. 8) (KRISHNAN ET AL, line 25-40, col. 6; line 25-38, col. 9)

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to utilize the biodegradable polylactide compositions disclosed in JP '658 in conventional biodegradable film applications such as paper coatings and/or foamed articles and in the production of commonly known disposable food service articles (.e.g, plates, cups, etc) (claims 12, 22, 24, 27). With respect to the presence of copolyesters with adipic acid and/or mono-esters, claim language such as "less than 5%", "up to 5%", "less than 2%" all encompass the value of 0%. Since the minimum amount of said components required in the claimed composition can be 0% (i.e., the specified components are deemed to be optional), prior art compositions containing 0% copolyesters with adipic acid meet the compositional limitations as recited in the present claims.

Response to Arguments

6. Applicant's arguments and the Kelly Affidavit filed 7/18/2007 have been fully considered but they are not persuasive.

(A) In response to the Kelly Declaration filed 7/1782007, the Declaration is found to be unpersuasive and highly repetitive of Applicant's arguments. The Declaration makes various assertions and makes conclusions, but fails to contain persuasive objective evidence to support those assertions or conclusions. In assessing the probative value of an expert opinion, the examiner must consider the nature of the matter sought to be established, the strength of any opposing evidence, the interest of the expert in the outcome of the case, and the presence or absence of factual support for the expert's opinion. Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 227 USPQ 657 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986). Conclusory statements that results were "unexpected," unsupported by objective factual evidence, were considered but were not found to be of substantial evidentiary value). Ex parte George, 21 USPQ2d 1058 (Bd. Pat. App. & Inter. 1991) Although an affidavit or declaration which states only conclusions may have some probative value, such an affidavit or declaration may have little weight when considered in light of all the evidence of record in the application. In re Brandstadter, 484 F.2d 1395, 179 USPQ 286 (CCPA 1973). (see MPEP 716.01(b) (III))

(B) Applicant's arguments and the Kelly Affidavit's assertions with respect to KRISHNAN have been considered but are moot in view of the new ground(s) of rejection.

(C) Applicant argues and the Kelly Affidavit asserts that CHEN fails to disclose the claimed invention in its entirety. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

(D) Applicant argues that GRUBER teaches away from CHEN and the claimed composition because the reference teaches the production of a highly specific type of PLA polymers. As an initial matter, since CHEN does not require the use of a particular type of polylactide polymer, one of ordinary skill in the art would reasonably believe that a variety of polylactide resins may be suitably used in the disclosed blend composition. It would be obvious to one of ordinary skill in the art to use a known polylactide resin such as those disclosed in GRUBER, which are known to have highly desirable extrusion and melt processing characteristics in the compositions of CHEN, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. In re Leshin, 125 USPQ 416. Applicant has not provided probative evidence to the contrary.

(E) Applicant argues and the Kelly Affidavit asserts that the teachings in GRUBER are incompatible with the teachings in CHEN because GRUBER discloses non-plasticized polylactide resin formulations. However, the reference *clearly and explicitly* states that the disclosed polylactide compositions can contain plasticizers (GRUBER, line 6-33, col. 28).

(F) Applicant argues and the Kelly Affidavit asserts that GRUBER teaches away from the claimed invention because the reference merely disclose methods of creating polylactide resins. However, contrary to Applicant's assertions, GRUBER clearly states that the addition of organic peroxides can take place *after* the polylactide resins are formed (GRUBER, line 1-6, col. 15) -- in other words, the peroxide can be added to an already formed polylactide acid polymer.

(G) Applicant argues and the Kelly Affidavit asserts that MOHANTY teaches away from the claimed invention because it is directed to flooring materials. In response to applicant's

argument that MOHANTY is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, MOHANTY, CHEN, and GRUBER all deal with polylactide-based polymer compositions and the production of environmentally friendly film and sheet materials formed therefrom. It should be further noted that MOHANTY incorporates the CHEN '651 reference in its entirety (MOHANTY, line 54-56, col. 1), as well as incorporating in their entirety two GRUBER references (US 5,998,552 and 6,291,597) which are both direct continuations of the GRUBER '095 reference relied upon in the present rejections. Therefore, one of ordinary skill in the art would reasonably believe the teachings in MOHANTY may be beneficially applied to the polylactide resin compositions in both the CHEN '651 and GRUBER '095 references. Applicant has not provided any probative evidence to the contrary.

(H) Applicant argues and the Kelly Affidavit asserts that MOHANTY teach away from GRUBER '095 because in MOHANTY, the peroxides are used for produce crosslinking in either polylactide resins or poly(epsilon-caprolactone) resins, while GRUBER '095 uses peroxides to provide "bridging in the linear lactide polymer thereby converting it into a less linear lactide polymer" (Applicant's arguments). However, Applicant's phrasing somewhat obscures the actual teaching in GRUBER '095 -- GRUBER '095 clearly states that the peroxides are used to provide "small amounts of bonding *between* linear polylactide molecules" (GRUBER, line 31-35, col. 14) (emphasis added) for the purpose of enhancing its rheological properties. Since "crosslinking" is typically defined as the linking of polymer molecules together via chemical

bonds, GRUBER essentially appears to be using peroxides to induce minor amounts of crosslinking in the polylactide resins. Regardless of the specific terms used (e.g., "crosslinking" or "bonding" or "bridging"), GRUBER and MOHANTY are essentially using peroxides to accomplish the same function -- inducing chemical bonds between polymer molecules in order to enhance the rheological and melt-processing characteristics of the polymer. Therefore, contrary to Applicant's arguments, there is nothing in MOHANTY which is incompatible or changes the principle of operation of the blends in CHEN or the polylactide resin in GRUBER. Similarly, there is nothing in the GRUBER reference which is incompatible or changes the underlying principle of operation in the blends of CHEN.

(I) In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, CHEN is relied upon to disclose polylactide blends containing poly(epsilon-caprolactone), while GRUBER discloses a known polylactide resin with advantageous properties in addition to disclosing conventional applications for biodedegradable polylactide-based compositions. GRUBER and MOHANTY all discloses the advantages of incorporating minor amounts of peroxides into biodegradable polymers (e.g., polylactides, poly(epsilon-caprolactone)) to modify and/or enhance rheological and melt properties. Applicant has not

provided any probative evidence of criticality or unexpected results commensurate in scope with the present claims from the recited peroxides.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vivian Chen whose telephone number is (571) 272-1506. The examiner can normally be reached on Monday through Thursday from 8:30 AM to 6 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney, can be reached on (571) 272-1284. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

The General Information telephone number for Technology Center 1700 is (571) 272-1700.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

August 31, 2007

Vivian Chen
Primary Examiner
Art Unit 1773